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Before the  
FEDERAL COMMUNICATIONS COMMISSION  
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APR 21 1993

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In re:

Implementation of Section 17  
of the Cable Television Consumer  
Protection and Competition Act of  
1992

Compatibility Between  
Cable Systems and Consumer  
Electronics Equipment

ET Docket No.  
93-7

REPLY COMMENTS OF  
THE NATIONAL CABLE TELEVISION ASSOCIATION, INC.

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**SUMMARY OF ARGUMENT**

NCTA believes that the cable industry has a very different view of cable's role in this proceeding than the electronics industry has for itself. This was forcefully demonstrated by the comments submitted by both groups in the first round of this proceeding. The cable industry's comments proposed balanced, near-term, solutions to compatibility problems while the electronics manufacturers focused principally on still-nascent technologies such as digital compression and transmission.

The electronics manufacturers also repeatedly mischaracterized cable as an industry without standards. In fact, cable operators function under a variety of stringent standards, some imposed by regulation, some self-imposed. A reliance on unspecified national standards, particularly in the area of channel capacity caps or scrambling technology, is ill-advised and anti-consumer. Moreover, standardization would in no way correct the basic compatibility problem

faced by most subscribers -- the single channel output of the typical converter/descrambler.

To date, the cable industry has offered constructive, balanced proposals that can solve most compatibility problems in the near-term. Specifically, the cable industry has committed to offering set-top devices such as RF Bypass switches, dual converter/descramblers, timer-equipped remote control units and converter/descramblers, as well as ANSI/EIA 563.x set back converter/descramblers. In return, the electronics industry must create truly "cable ready" TVs and VCRs.

The cable industry, while committed to improving compatibility in the near-term, is also committed to developing standards for future technologies such as digital compression. The technology is not sufficiently developed, however, to make advanced discussions appropriate at the present. Moreover, the Commission's immediate mandate is to improve current compatibility problems.

The electronics industry's faith in "clear channel" technologies is both misplaced and indicative of its belief that the cable industry must shoulder the burden of finding solutions to compatibility issues. In contrast, the cable industry's proposal to increase compatibility anticipates a sharing of the burden, as contemplated by Section 17 of the 1992 Cable Act.

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ET Docket No.  
93-7

To the Commission:

**REPLY COMMENTS OF  
THE NATIONAL CABLE TELEVISION ASSOCIATION, INC.**

The National Cable Television Association, Inc.  
("NCTA"), by its attorneys, hereby submits its Reply  
Comments in response to the Commission's Notice of Inquiry<sup>1/</sup>  
regarding implementation of Section 17 of the Cable Consumer  
Protection and Competition Act of 1992 (the 1992 Cable Act).

**Introduction**

The comments recently filed in this proceeding by  
the cable and electronics industries clearly indicate the  
role that each group sees for itself in resolving  
cable/consumer electronics compatibility problems. NCTA  
submits that the cable industry has stepped up to the plate  
in this proceeding and volunteered solutions that would

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<sup>1/</sup> Notice of Inquiry, ET Docket No. 93-7, FCC 93-30  
(adopted January 14, 1993, released January 29, 1993)  
("NOI").

solve most existing compatibility problems in the near future.



In contrast, electronics manufacturers have used this forum to mischaracterize cable as a standardless industry (or, in the alternative, an industry with 11,000 different -- and rapidly changing -- standards). However, technological developments in the area of signal security have neither occurred overnight nor in a vacuum; similarly, there is no basis for claiming that a large number of diverse technologies exist to protect cable programming. Electronics manufacturers simply may have failed to take into account these developments when planning new product lines.

Electronics manufacturers also seem to believe that there is a practical way that cable signals could be delivered "in the clear" -- thus solving all compatibility problems -- if only some form of unspecified "national standards" were developed for the cable industry. This belief, in addition to evidencing a willingness to impose either untested or, as yet, impractical, "clear channel" solutions on cable operators, indicates which direction the electronics industry prefers to see the compatibility burden lie: on cable operators, subscribers, franchise authorities and programmers.

In contrast, NCTA believes that solutions to  
compatibility problems lie not in immediately halting

the majority of cable industry commenters in this proceeding.

These Reply Comments will address, for the most part, those statements made by the Electronics Industries





For example, EIA/CEG suggests that there are -- or will be -- some 11,000 different technical standards for "channelization, scrambling, digital transmission and compression, etc."<sup>4/</sup> As the Commission understands, however, this portrayal is completely inaccurate. Virtually every cable system adheres to the channelization scheme found in IS-6 (attached hereto as Exhibit 1). Further, there are only three scrambling technologies currently in widespread use by cable operators -- and each of these has been used for a number of years.<sup>5/</sup> In addition, the cable industry stands ready and willing to work with EIA/CEG to develop standardized IR codes for cable converters. As for overall signal performance parameters, the cable industry and the Commission have recently completed a lengthy proceeding to set such standards.<sup>6/</sup>

EIA/CEG further cites the problem of cable's allegedly "standardless" channel mapping schemes. EIA/CEG Comments at p. 16. NCTA believes it is unfair, however, to

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<sup>4/</sup> EIA/CEG Comments at p. iii.

<sup>5/</sup> Of the three scrambling methods available, most cable systems use a combination of sync suppression and video inversion to protect valuable programming. Phase modulation is used much less frequently.

<sup>6/</sup> In the Matter of: Cable Television Technical and Operational Requirements (MM Docket No. 91-169) and Review of the Technical and Operational Requirements of Part 76, Cable Television (MM Docket No. 85-38), Report and Order adopted February 13, 1992, released March 4, 1992 (FCC 92-61), 7 FCC Rcd. 2021.

characterize cable's practice of transmitting broadcast channels on different channel numbers (e.g., transmitting channel 12 on channel 37 prior to offering it to subscribers as channel 12) as a "problem" requiring the imposition of standards. Cable operators must go through this process to correct TV and VCR Direct Pick-Up interference. The subscriber receives a better signal because it is not carried "on channel." Moreover, the subscriber is not confused because the mapped converter ultimately shows the "correct" channel number to the subscriber. In any event

has thrived because it continues to offer its subscribers more -- and more diverse -- programming.<sup>8/</sup> Artificially limiting channel expansion until manufacturers are able, or willing, to "catch up" is simply unfair to subscribers. With the various solutions proposed in the cable industry comments (including the recommendation for a replaceable tuner), it is also unnecessary. Finally, painful experience has shown that a national uniform scrambling standard is nothing more than a gilt-edged invitation to cable thieves to redouble their piracy efforts. This "solution" is neither contemplated by Section 17 nor in the best interest of consumers.

But even the imposition of a national uniform scrambling standard would not solve the compatibility problems of installed TVs and VCRs. Thus, EIA/CEG is

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7/ (...continued)  
Comments at p. 2 (the end result of this proceeding should be "new standards for transmission, encryption, and, if necessary, security of non-terrestrially-broadcast signals." (emphasis deleted)).

8/ While EIA/CEG depicts the electronics industry as "a robustly competitive industry sector" and cable as an "unregulated monopoly," EIA's most frequent complaints are directed at the cable industry's plans to increase channel capacity and provide subscribers with more product for their money. While electronics manufacturers would apparently like to limit the ability of cable operators to increase their offerings to subscribers, there is no indication that manufacturers will similarly limit their plans for introducing new products and features. See EIA/CEG Comments at pp. 46 - 47. NCTA submits that limitations imposed upon either industry would be of little or no benefit to consumers.

incorrect when it states that the genesis of Section 17 was a "lack of standards." EIA/CEG Comments at p. 6 (emphasis in original).<sup>2/</sup> As the Commission -- and EIA/CEG -- understands, the issue is not any alleged lack of cable industry standards but the fact that converter/descramblers and converters deliver a single channel to a subscriber's TV or VCR.<sup>10/</sup> It is therefore to that problem that the cable industry has directed most of its proposed solutions.

B. The Electronics Industry Should Not Have Been  
Surprised by Increases in Cable Penetration

whim.<sup>11/</sup> However, anticipating and planning for the inevitable increases in cable penetration and channel expansion as well as developments in security technology should not have been an unduly difficult task for the electronics industry. Trade and even consumer press reports, projections and commentaries have been readily available.<sup>12/</sup>

EIA/CEG's further claim that the cable industry is "increasingly incompatible with consumer electronics products" is similarly off the mark. EIA/CEG Comments at p. 24.<sup>13/</sup> Perhaps the converse is more to the point. Cable operators have been in the business of protecting valuable programming through scrambling for approximately 20 years. What has changed is that operators have placed greater reliance on scrambling, especially following Congress'

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<sup>11/</sup> "The number of channels on the cable system may change unpredictably from one day to the next." EIA/CEG Comments at p. 8 (emphasis added).

<sup>12/</sup> Attached hereto as Exhibit 2 is a chart derived from Cable Television Developments (February, 1993 edition), a publication readily available from NCTA.

<sup>13/</sup> In apparent contrast to the electronics industry, New York City has recognized that both industries should be working harder to resolve these issues. "In fact, the problems are mounting every year because the consumer electronics industry adds and continues to promote new features which may be worthless on addressable cable systems." New York City Comments, Appendix B (Letter from William F. Squadron, Commissioner of New York City's Department of Telecommunications and Energy to Alfred Sikes, former Chairman of the Federal Communications Commission).

acknowledgment of the severity of the cable theft problem in 1984. That cable operators should increasingly turn to the most effective signal security technology is also unsurprising, given that cable operators' investment in programming has grown from \$1.7 billion in 1984 to an estimated \$3.8 billion in 1992.<sup>14/</sup>

Moreover, the electronics industry's claim that cable has become "increasingly incompatible" is somewhat ironic, in view of the manufacturers' propensity to knowingly market equipment to consumers who may not realize -- or have been told of -- its limited applicability.<sup>15/</sup>

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<sup>14/</sup> Source: Cable Television Developments (February, 1993), NCTA, p. 7-A.

<sup>15/</sup> For example, EIA/CEG states that consumers have invested roughly \$9 billion in color TVs with the picture-in-picture ("p-i-p") feature, representing 10% of U.S. households. EIA/CEG Comments at p. 3, n. 2. Many TV models (particularly those with larger screen sizes), indeed, cannot be bought without this feature. Nonetheless, an EIA/CEG survey indicated that many people would choose not to buy a p-i-p equipped TV where the feature would be disabled because of compatibility problems. The survey did not, apparently, ask whether those sets would be purchased where the p-i-p function would be rendered useless simply because the consumer did not have access to a necessary second tuner (usually provided by a VCR). In the absence of dual tuners in the TV set the p-i-p function requires access to a VCR or a second tuner provided by the cable converter/descrambler.

Interestingly, EIA/CEG apparently also questions the cable industry's motives for providing (and charging subscribers for) converter/descramblers. EIA/CEG Comments at p. 14 ("cable operators have routinely placed other considerations higher [than compatibility]"). As detailed in the NCTA Comments, however, subscribers benefit from the  
(continued...)

Unfortunately, it appears that EIA/CEG's approach to date in this proceeding is to continue to shun responsibility for its role in solving compatibility problems. See EIA/CEG Comments at p. 26 ("[T]he burden must be carried primarily by the cable industry.").

II.            The Cable Industry Has Used this Forum to Propose Workable Solutions to Compatibility Problems; The Electronics Industry Would Use it for Different Purposes.

The EIA/CEG Comments, and those of its members, present a strong contrast to those offered by NCTA and individual cable operators. While EIA/CEG would have the Commission place the major burden of increasing compatibility upon the cable industry by requiring it to modify its practices to eliminate incompatibility, cable operators believe that balanced, constructive proposals are more appropriate in this forum.<sup>16/</sup> To this end, cable has

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<sup>15/</sup>     (...continued)  
increased DPU shielding capabilities and channel tuning capacity of cable operator provided converter/descramblers. While there have been legitimate concerns raised regarding some equipment pricing strategies in some instances, charging subscribers for converter/descramblers is not inappropriate.

<sup>16/</sup>     In marked contrast to the bulk of the electronics industry comments, those of Zenith Electronics Corporation offer a more thoughtful and balanced approach to solving compatibility problems between the two industries. For example, Zenith notes the various problems associated with interdiction and broadband descrambling. Zenith Comments at p. 4. Zenith also endorses inclusion of a modified version of the Decoder Interface Connector on certain models of TVs  
(continued...)

offered to make available set-top devices that allow a subscriber to watch a program on one channel while simultaneously taping a program on another channel, tape two consecutive programs appearing on different channels and use advanced picture generation and display features.<sup>17/</sup> All of these proposals will allow cable operators to protect their services against piracy -- the continuing importance of which Congress expressly recognized in Section 17 of the 1992 Cable Act -- while enabling subscribers to use advanced equipment functions. EIA/CEG, in contrast, suggests solutions that would devastate an operator's ability to secure its valuable programming, an outcome that Congress clearly did not intend.<sup>18/</sup>

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<sup>16/</sup> (...continued)  
(modified to include an Intermediate Frequency ("IF") port).  
Id. at 6.

<sup>17/</sup> As set out in the NCTA Comments at pp. 30 - 31, these solutions would require the deployment of dual set-top converter/descramblers (or converter/descramblers with an RF Bypass feature) and converter/descramblers or remote controls with built-in timers.

<sup>18/</sup> On the one hand, EIA/CEG underscores the need for maintaining market share for its members; on the other, it discounts cable concerns over piracy by appearing to challenge the loss figures suggested by the NCTA survey. See EIA/CEG Comments at p. 27, n. 40. EIA/CEG apparently questions the validity of the \$5 billion in losses on grounds that some cable pirates (possibly up to 25%) might not sign up for cable, even if prevented from stealing the service. Even assuming, arguendo, the \$5 billion losses attributed to cable piracy are overstated, \$3 or \$4 billion in lost revenue annually is of immense importance to the cable industry. NCTA disagrees, moreover, with EIA/CEG's

(continued...)



In light of the cable industry's problem solving approach to this proceeding,<sup>19/</sup> NCTA was astonished at the EIA/CEG recommendation that cable be required to completely overhaul its current -- and well established -- security technology:

[EIA/CEG] believes that the Commission should exercise its power to forbid scrambling, unless and until the cable industry agrees to adopt a single standard for cable-delivered . . . scrambling -- or until one is prescribed by the Commission.

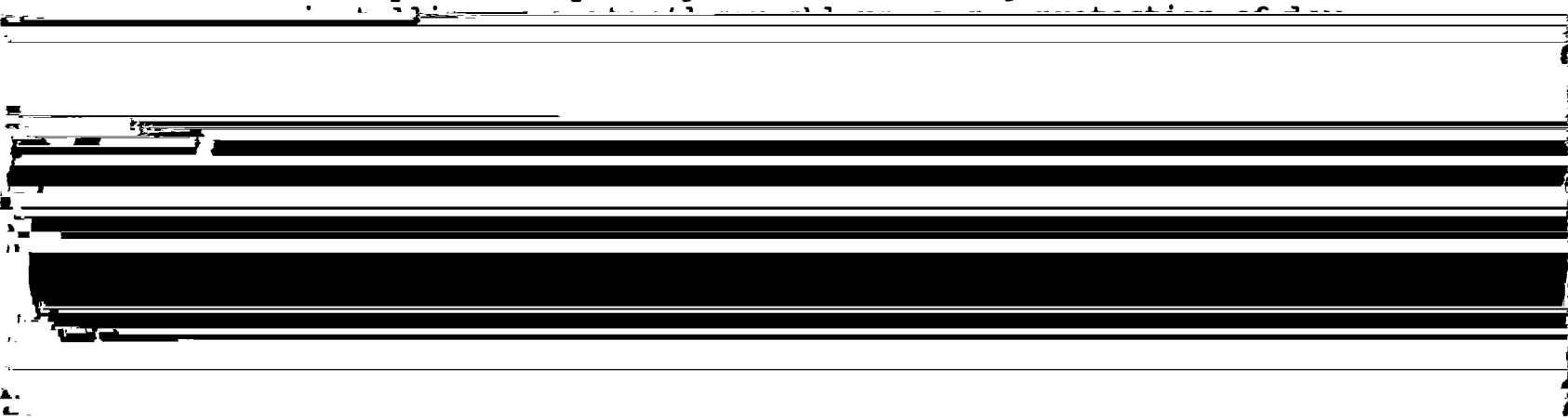
EIA/CEG Comments at pp. 42 - 43 (emphasis added).<sup>20/</sup> In contrast to this draconian solution, the cable industry has offered a number of real world proposals -- for example, the installation of RF Bypass switches, dual descrambler/converters, set-back descramblers, remote

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<sup>18/</sup> (...continued)  
apparent conclusion that theft of service by those unwilling to pay for it does not somehow count as "loss."

<sup>19/</sup> For example, NCTA agrees with EIA/CEG's proposal to hold bilateral discussions regarding the use of an extended data service to "educate" a TV or VCR's tuner to a channel mapping scheme. EIA/CEG Comments at p. 17, n. 18.

<sup>20/</sup> At least one municipality, New York City, might not welcome EIA/CEG's proposal to forbid scrambling. New York has specifically recognized the advantages to subscribers of



controls with built-in timers and VCR Plus+ -- to eliminate the majority of compatibility problems in the near future. See NCTA Comments at pp. 30 - 31. While not perfect, these proposals do represent a constructive step towards solving these problems in a timely and realistic manner. Although EIA/CEG regards these efforts as the industry's "85 percent solution," it should be noted that this phrase -- and support for the notion of substantial, albeit incomplete, resolution of current compatibility problems -- was put forth by a representative of the Commission attending a meeting of the Joint Advisory Committee on February 23, 1993. See EIA/CEG Comments at p. 48, n. 71.<sup>21/</sup>

While perfectly willing to impose enormous burdens on the cable industry to alter its current method of

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<sup>21/</sup> EIA/CEG also refers, somewhat obliquely, to a number of advanced services as "susceptible to disruption" caused by scrambling, specifically closed-captioning, extended data services, ghost-cancellation and teletext. See EIA/CEG Comments at p. 23. However, while EIA/CEG cites closed-captioning as a problem area, it was the cable industry that originally proposed the rules that currently permit cable subscribers to receive this service in a recoverable form. In addition, cable has not addressed any compatibility issues related to "extended data services" because those services do not exist at present. With regard to ghost-cancellation circuitry, a cable operator will only strip the ghost-cancelling portion of a broadcast signal if, in turn, the operator corrects the problem at the headend. This is the only way that subscribers that own newer sets (which contain ghost-cancelling circuitry) and those that own older sets can both receive acceptable broadcast signals over the cable system. Finally, cable industry scrambling had nothing to do with the failure of teletext as a viable business.

operation, EIA/CEG itself appears unenthusiastic about addressing the compatibility problems faced by owners of existing TVs and VCRs:

[T]here is nothing practicable that the consumer electronics industry can do to ease the compatibility problems already facing the 300 million TVs and VCRs currently in use in the United States, or even future TVs and VCRs, so long as the cable industry continues changing the

III Despite Claims by the Electronics Industry, Cable

standard for the industry.<sup>24/</sup> Only three cable companies have bought digital hardware from a total of two vendors, these orders representing approximately 1.1 million units.

In marked contrast, the comments of EIA/CEG members almost unanimously support the deployment of so-called "clear channel" security technologies, i.e., trapping, interdiction and broadband descrambling as a

and disadvantages of interdiction.<sup>28/</sup> In addition, NCTA recommends careful study of the excellent economic analysis performed by TeleCable Corporation regarding the impact of interdiction deployment on the average cable system. See Appendix C to the TeleCable Corporation Comments. TeleCable's study concludes that the replacement of addressable decoders could cause the average system to lose \$2.3 million over a 9 year period.

In addition to its favorable opinion of interdiction, EIA/CEG also claims that broadband  
~~is essential to the development of the cable industry~~ EIA/CEG Comments at

tremendous incentive to would-be pirates to defeat the technology. Finally, broadband descrambling is an expensive technology. NCTA currently estimates that the cost of implementation is approximately \$2,000 - \$4,000 per channel for headend costs alone. This investment would fall hardest on small operators.

While electronics manufacturers espouse the benefits of interdiction and broadband descrambling, their reception to the ANSI/EIA 563.x Decoder Interface Connector has been significantly cooler, if not downright hostile.<sup>29/</sup> EIA/CEG also claims that "most in the cable industry recognize the obsolescence of EIA-563." EIA/CEG Comments at p. 33, n. 50 (emphasis added). Cable industry commenters in this proceeding, however, have overwhelmingly endorsed the deployment of the ANSI/EIA 563.x Decoder Interface Connector. These cable companies, serving well over 20,000,000 subscribers, recognize that the ANSI/EIA 563.x Decoder Interface Connector can solve compatibility problems, both now and in the future.

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<sup>29/</sup> See, e.g., Sony Comments at p. 18 ("the near term advent of digital transmission could render an analog decoder interface obsolete."). The ANSI/EIA 563 Decoder Interface Connector standard is the only standard, however, that has ever been agreed upon by the cable and electronics industries. Moreover, we refer to this standard as ANSI/EIA 563.x to highlight the fact that, despite claims to contrary, it is adaptable to future video distribution technologies such as digital compression and transmission.



EIA/CEG further alleges that the ANSI/EIA 563.x standard is no longer compatible "with the full panoply of scrambling systems used by cable operators today and provides no basis for handling the digital signals of tomorrow." EIA/CEG Comments at p. 33. With regard to current compatibility, however, ANSI/EIA 563.x is, almost by definition, immediately compatible with each of the several scrambling systems in existence because each manufacturer of converter/descramblers would also make the appropriate ANSI/EIA 563.x Decoder. If, however, EIA/CEG is referring to phase modulation scrambling, this technology represents a very small portion of the scrambling devices in use. Further, NCTA would support Zenith's proposal to add an IF port to the ANSI/EIA 563.x mix, which would eliminate the compatibility problem with phase modulated scrambling systems. See Zenith Comments at p. 9.<sup>30/</sup> Finally, attached as Exhibit 4 is an analysis of the ANSI/EIA 563.x Decoder Interface Connector prepared by NCTA entitled "Application of the Multiport Connector in the Future." As the analysis shows, the interface can be used to handle a number of developing technologies, including digitally compressed and transmitted signals.

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<sup>30/</sup> Zenith would require an IF interface as part of any